

**Commonwealth of Kentucky**  
**Division for Air Quality**  
***EXECUTIVE SUMMARY***

(FINAL)

Title V, Operating

Permit: V-08-021

Louisville Gas and Electric Company, Magnolia Station

Louisville, KY 40232

November 3, 2008

Chris Walling, Reviewer

SOURCE ID: 21-123-00012

AGENCY INTEREST: 38839

ACTIVITY: APE 20080001

**SOURCE DESCRIPTION:**

On June 10, 2008, Louisville Gas and Electric submitted a Title V renewal application to the Division for their existing natural gas compression, storage, processing and distribution facility in Magnolia, Kentucky. The pipeline-quality natural gas is stored in geological formations underground and then pumped out to be re-distributed during peak demand in winter months. Underground storage causes hydrogen sulfide (H<sub>2</sub>S) contamination due to bacterial action. Hence, H<sub>2</sub>S is removed with an amine sweetening process prior to re-distribution. There is an ethylene glycol dehydration unit and boilers to support both the sweetening and the dehydration processes. In addition, the source has six natural-gas fired compressor engines to compress the gas back into the distribution networks. The 10 MMBtu/hr, 8.4 MMBtu/hr and 1.0 MMBtu/hr units which were subject to applicable standards but were previously permitted as insignificant units under Section C have been moved to Section B of the permit.

The source is permitted for continuous operation, 8760 hours per year, although the facility historically only operates approximately one fourth of every year, the winter months. Currently, there are four emissions units, two control measures (an afterburner for the sweetening process and a BTEX flare for the de-watering process). The afterburner on the natural gas purification plants, converts H<sub>2</sub>S to sulfur dioxide (SO<sub>2</sub>) at an efficiency rate of 98%. Formaldehyde emissions are generated from the natural gas compressor units, however the risk analysis performed by the Division indicates that there will be no adverse effects and they satisfy the requirements of 401 KAR 63:020. The source is not subject to the new source performance standards (NSPS) or the Maximum Achievable Control Technology (MACT) due to the dates of installation and operation. Emissions factors are taken from AP-42 and a mass balance performed by the source.

**PUBLIC AND AFFECTED STATE REVIEW:**

Affected states (Indiana) were notified of the issuance of the draft permit on September 4, 2008 via e-mail. On August 6, 2008, the public notice on availability of the draft permit and supporting material for comments by persons affected by the plant was published in *The Larue County Herald News* in Hodgenville, Kentucky. The public comment period expired 30 days from the date of publication.

Comments were received from Louisville Gas and Electric on September 2, 2008. Attachment B lists

the comments received, the Division's response to each comment, and a detailed explanation of the changes made to the permit. Minor changes were made to the permit as a result of the comments received; however the Division has concluded that the proposed operation will comply with all air quality regulations and requirements.

#### **U.S. EPA REVIEW:**

The U.S. EPA was notified of the issuance of the proposed permit on September 30, 2006 via e-mail. The comment period expired 45 days from the date of e-mail. No comments were received during this period. The permit is now being issued final.